

# DOCUMENT RESUME

ED 149 400

CS 501 961

AUTHOR Hayes, Daniel T.; Morganstern, Barry F.  
 TITLE Nonintellective Predictors of Academic Success in the Introductory College-Level Speech Communication Course.  
 PUB DATE 77  
 NOTE 20p.; Study prepared at John Wood Community College  
 EDRS PRICE MF-\$0.83 HC-\$1.67 Plus Postage.  
 DESCRIPTORS \*Academic Achievement; College Students; Educational Research; Higher Education; \*Predictor Variables; \*Speech Communication; \*Success Factors

## ABSTRACT

Data from 212 students were collected as part of a study of factors that contribute to academic success in introductory college-level speech communication courses. Nine noncognitive predictor variables were included: speech experience, absence of speech anxiety, four indicators of aspiration/performance consistency, and three demographic variables. Results of multiple regression analyses indicated that six of the variables correlated significantly with course grade: three measures of aspiration/performance consistency, speech experience, absence of speech anxiety, and sex. Although the multiple correlation was statistically significant, the prediction equation was not viewed as theoretically meaningful, because only 15% of the variance in student grades was accounted for. (Author/AA)

\*\*\*\*\*  
 \* Reproductions supplied by EDRS are the best that can be made \*  
 \* from the original document. \*  
 \*\*\*\*\*

ED149400

U.S. DEPARTMENT OF HEALTH,  
EDUCATION & WELFARE  
NATIONAL INSTITUTE OF  
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

NON-INTELLECTIVE PREDICTORS OF ACADEMIC SUCCESS IN  
THE INTRODUCTORY COLLEGE-LEVEL SPEECH  
COMMUNICATION COURSE

BY

DANIEL T. HAYES\* and

BARRY F. MORGANSTERN\*

"PERMISSION TO REPRODUCE THIS  
MATERIAL HAS BEEN GRANTED BY

Daniel T. Hayes

Barry F. Morganstern

TO THE EDUCATIONAL RESOURCES  
INFORMATION CENTER (ERIC) AND  
USERS OF THE ERIC SYSTEM."

\*Daniel T. Hayes (Ph.D., University of Missouri - Columbia, 1977) is presently Coordinator of Academic Programs at John Wood Community College and teaches at Quincy College, Quincy, Illinois. Barry F. Morganstern (Ph.D., University of Missouri - Columbia, 1977) is currently Assistant Professor of Speech Communication at West Virginia University.

C5501 961

In investigations that have involved the prediction of student performance in the basic college-level speech communication course, researchers have typically focused upon course grade as the traditional measure of academic success. Accordingly, many intellectual variables<sup>1</sup> have been the subjects of investigations designed to identify valid predictors of academic performance in the introductory course.<sup>2</sup> While a number of research studies have demonstrated the usefulness of intellectual predictors of academic success as measured by overall college grade point average,<sup>3</sup> less is known about the role played by nonintellectual contributors to academic performance, particularly within specific course areas.<sup>4</sup> The purpose of this investigation was therefore to identify nonintellectual factors that contribute to academic success in a basic college-level speech communication course that emphasized public speaking and to quantify the contributions to determine if accurate prediction of introductory speech course grades is possible.

Speech communication literature suggested that three nonintellectual factors were probably related closely to academic success in the basic course with a public communication emphasis (since each factor was also a correlate of public speaking ability). A first factor could be labeled "speech experience" and referred to the amount of public communication-related experiences that the student brings to the basic course.<sup>5</sup> A second factor seemingly associated with academic success in the basic course involved the absence of "speech anxiety,"

the apprehension experienced by some students prior to and during public speaking performances.<sup>6</sup> A third dimension involved the amount of consistency between student estimates of academic "aspiration and previous performance."<sup>7</sup> The research question posed in the investigation thus became: To what extent do the nonintellective variables (speech experience, absence of speech anxiety, and consistency among level of aspiration and performance) contribute to academic success of students in the basic college-level speech communication course?

#### Methods

Students enrolled in the Introduction to Speech Communication course at the University of Missouri - Columbia during the Winter, 1977, semester served as subjects of the investigation (81 males, 131 females). Each semester, the course enrolls some one thousand students, many of whom participate in research projects.

Operationally, the amount of a student's speech experience was determined on the basis of subject completion of the revised Knower Speech Experience Inventory (SPEXP),<sup>8</sup> speech anxiety was measured through the McCroskey Personal Report of Public Speaking Apprehension (PRPSA),<sup>9</sup> and aspiration-performance consistency was determined on the basis of the four Worell aspiration measures (ASPI-4).<sup>10</sup> A pilot administration of the predictor instruments to 57 subjects during the Fall, 1976, semester indicated that the split-halves reliability of the SPEXP and PRPSA measures was .953 and .934;

the Kuder-Richardson 20 formula estimated reliability of the two instruments at .940 and .939. Two administrations of the Worell questionnaire revealed that the test-retest reliability estimate was .819.<sup>11</sup> During the actual investigation, subjects completed the three measures in the early portions of the basic course.

Although the researchers lacked sufficient information with which to construct a theoretical and/or empirical rationale, it was believed that the inclusion of the variables of sex, age, and year in school would add meaning to the interpretation of data. Therefore, a total of nine nonintellective predictor variables (speech experience, absence of speech anxiety, four indications of aspiration-performance consistency, and three demographic variables) were included in the investigation.

Academic success referred to the grade received by a subject upon completion of the introductory speech communication course. In the course that the researchers investigated, instructor criteria for course grades included four public communication performances, classroom participation and contribution, and a final examination. At the time of the investigation, there was not in existence any known mechanism for assessing the reliability of individual instructor course grades. Therefore, as in other studies that indexed grades as a form of academic success, no procedures for the examination of course grade reliability were employed.

Multiple regression<sup>12</sup> was utilized to answer the research

question: To what extent are the nine nonintellective variables predictive of academic success in the basic course? The stepwise inclusion method<sup>13</sup> was employed in order to determine which predictor variables would enter the optimal prediction equation. In all instances, statistical significance levels were established at .05.

### Results

In order to provide a better understanding of the multiple regression analysis, table 1 includes the correlation coefficients among all predictors and the criterion, course grade. Also, the results of computing correlation coefficients among each nonintellective predictor and all other predictors are included.

[Insert table 1 here]

Table 2 presents analysis of variance results for the regression of course grades upon speech experience, absence of speech anxiety, and the four measures of aspiration-performance consistency. Data indicated that the six nonintellective variables, when considered together, were statistically significant predictors of subject grades in the basic speech communication course.

[Insert table 2 here]

Table 3 includes analysis of variance results when the three demographic variables of sex, age, and year in school were added to the regression problem. The figures suggested that the regression of

course grades upon the nine collective predictors was again statistically significant.

[Insert table 3 here]

Stepwise inclusion was used in order to determine: (1) which individual predictors made significant contributions to the regression; and (2) the combination of statistically significant nonintellective variables that best predicted academic success in the basic course. Results of the analysis are presented in table 4.

[Insert table 4 here]

The data revealed that ASP3 (consistency among academic work capacity and previous academic performance) correlated significantly and most closely with GRADE and therefore entered the regression equation first. The second stepwise inclusion indicated that SPEXP added significantly to the prediction of GRADE after ASP3 variance had been considered. Finally, the third inclusion suggested that SEX contributed significantly to the prediction after the two other regression equation entrants were taken into account; females received higher grades in the course than did males. Regression coefficients for each of the entered predictors were statistically significant.

While the three significant predictors of GRADE accounted for over 15 percent of the variance associated with the criterion variable, none of the remaining nonintellective predictors had regression

coefficients whose *F*-ratios exceeded the critical value required for statistical significance. Either the six variables had little or no relation to GRADE or, as table 1 tended to indicate, the predictors were too closely related to the three variables already in the regression equation to enhance the prediction significantly. Only ASP3 (consistency among estimated work capacity and previous academic performance), speech experience, and sex contributed significantly to academic success as measured by grade in the basic speech communication course. The optimal prediction equation could therefore be expressed:  $GRADE = .828 + .160 (\text{ASP3 score}) + .005 (\text{SPEXP score}) + .171 (\text{dichotomous SEX score, 1 = male, 2 = female})$ .

#### Discussion

As the results indicated, the predictor variable that correlated most closely with academic success in the basic speech communication course was not a communication-related variable. Students who received the best marks in the course generally revealed more aspiration-performance consistency than did students who received poorer grades. The better students' estimates of previous academic performance were found to be consistent with aspirations that involved future academic performance (ASP2), capacity academic work performance (ASP3), and satisfaction with performance (ASP4). Only the aspiration-performance predictor that involved study habits (ASP1) did not correlate significantly with academic success in the course. These findings provide support for the claim that aspiration-performance consistency

may be among the most important predictors of academic success at the college level.<sup>14</sup> It appears that students who succeeded in the speech course did so not strictly because of their expertise in speech communication, but also because of their inclination to succeed academically in most college courses.

Students who received high marks in the basic speech course typically revealed higher levels of speech experience than did students who earned low grades in the class. This finding corroborates earlier research that demonstrated a significant relationship between the speech background of students and the ability to succeed academically in a first college-level course in speech communication.<sup>15</sup> Additionally, students who earned high grades revealed lower public speaking anxiety scores than poorer students. The findings relative to speech experience and the absence of speech anxiety, however, can perhaps be explained by the likelihood that college students who have extensive speech experience and low anxiety can be expected to have greater liking for the types of activities involved in a beginning speech class. Increased liking for speech activities, as one researcher has noted, leads to higher course grades among experienced speech communicators.<sup>16</sup>

Neither age nor year in school correlated significantly with course grades, however the relationship between sex and academic success was statistically significant. Females earned higher grades than males. This finding, although notable, should not necessarily

be interpreted as a peculiarity of the basic speech communication course under investigation; throughout academic success studies, females consistently perform slightly better than males.<sup>17</sup>

The results of the investigation seemed encouraging to the extent that several nonintellective predictor variables correlated significantly with the criterion variable. More discouraging, however, was the fact that all nine predictors accounted for only 16 percent of the variance associated with course grades. High correlations among the predictors help to explain, at least in part, the rather small amount of variance accounted for in academic success. Results presented in table 1 indicated several statistically significant correlations among the predictors themselves. Speech experience, for example, was significantly related to the absence of speech anxiety and aspiration-performance consistency; the aspiration measures that involved future academic performance (ASP2), capacity academic work performance (ASP3), and satisfaction with performance (ASP4) correlated significantly with one another. The relationships among the predictor variables must be stressed for two reasons. First, the high correlations limited the amount of variance accounted for by the predictors. Second, the high predictor relationships severely affected the degree of accuracy with which the variables predict academic performance. The nonintellective variables that were investigated, in other words, did not adequately account for course grade variance to be used widely for prediction purposes.

### Conclusion

Results of the study accentuate the need for more descriptive research directed toward the explanation of academic performance among college students in introductory speech communication classes; the nonintellective variables under investigation, though statistically significant correlates of academic success, did not account for large portions of the variance associated with course grades, and the predictors therefore do not seem useful from a practical standpoint. From a theoretical viewpoint, however, the study helps to explain why students succeed in the introductory course but does not offer definitive conclusions regarding student achievement. In light of the convincing amount of evidence demonstrating that many intellective factors are involved in college student performance, perhaps future research efforts can involve the ways in which nonintellective and intellective variables combine to account for student success in the basic college-level speech communication course.

TABLES

10

12

TABLE 1  
CORRELATION COEFFICIENTS IN MATRIX FORM

|       | GRADE | SPEXP | PRPSA | ASP1   | ASP2  | ASP3  | ASP4  | SEX    | AGE    | YRSC   |
|-------|-------|-------|-------|--------|-------|-------|-------|--------|--------|--------|
| GRADE | 1.000 | .224* | .140* | .093   | .213* | .294* | .203* | .138*  | -.008  | .027   |
| SPEXP |       | 1.000 | .466* | -.196* | .000  | -.008 | .001  | .042   | -.034  | .012   |
| PRPSA |       |       | 1.000 | -.144* | .073  | .012  | .071  | -.144* | -.052  | .002   |
| ASP1  |       |       |       | 1.000  | -.020 | .390* | -.070 | .225*  | -.068  | -.157* |
| ASP2  |       |       |       |        | 1.000 | .533* | .061* | .034   | .006   | .034   |
| ASP3  |       |       |       |        |       | 1.000 | .607* | .090   | .032   | -.018  |
| ASP4  |       |       |       |        |       |       | 1.000 | -.023  | .069   | .069   |
| SEX   |       |       |       |        |       |       |       | 1.000  | -.207* | -.381  |
| AGE   |       |       |       |        |       |       |       |        | 1.000  | .526*  |
| YRSC  |       |       |       |        |       |       |       |        |        | 1.000  |

\*sig. at .05

TABLE 2

MULTIPLE REGRESSION ANALYSIS: PREDICTION OF COURSE GRADE  
FROM SIX NONINTELLECTIVE VARIABLES

| Source     | SS     | DF  | MS    | F      |
|------------|--------|-----|-------|--------|
| Regression | 14.216 | 6   | 2.369 | 5.845* |
| Residual   | 83.105 | 205 | .405  |        |

\*sig. at .05

TABLE 3

MULTIPLE REGRESSION ANALYSIS: PREDICTION OF COURSE GRADE  
FROM NINE NONINTELLECTIVE VARIABLES

| Source     | SS     | DF  | MS    | F      |
|------------|--------|-----|-------|--------|
| Regression | 16.402 | 9   | 1.822 | 4.549* |
| Residual   | 80.919 | 202 | .400  |        |

\*sig. at .05

TABLE 4  
COURSE GRADE STEPWISE INCLUSION

| Variables in the Equation: Step 1                   |       |                 |         |
|-----------------------------------------------------|-------|-----------------|---------|
| Variable                                            | B     | $r^2$ increment | F       |
| ASP3                                                | .165  | .086            | 19.927* |
| (Constant)                                          | 1.833 |                 |         |
| Variables in the Equation: Step 2                   |       |                 |         |
| Variable                                            | B     | $r^2$ increment | F       |
| ASP3                                                | .166  | .086            | 21.281* |
| SPEXP                                               | .005  | .051            | 12.458* |
| (Constant)                                          | 1.077 |                 |         |
| Variables in the Equation: Step 3                   |       |                 |         |
| Variable                                            | B     | $r^2$ increment | F       |
| ASP3                                                | .160  | .086            | 19.815* |
| SPEXP                                               | .005  | .051            | 13.229* |
| SEX                                                 | .171  | .015            | 3.949*  |
| (Constant)                                          | .828  |                 |         |
| Multiple $r = .391$ $r^2 = .152$ St. Error = .62956 |       |                 |         |

\*sig. at .05

#### FOOTNOTES

<sup>1</sup>David E. Lavin, The Prediction of Academic Performance (New York: Russell Sage Foundation, 1965), pp. 47, 64. Lavin distinguished between intellectual and nonintellectual factors associated with student achievement when he argued that the former refer to the so-called "intellectual" aspects related to student performance (e.g., verbal ability/achievement). Nonintellectual factors, conversely, refer to such variables as personality traits, demographic factors, etc.

<sup>2</sup>See Larry R. Judd and Carolyn Smith, "Predicting Success in the Basic College Speech Course," The Speech Teacher 18 (January 1969): 13-17; and K. W. Wall, "The Continuing Problem of Predicting Success in the Basic College Speech Course," The Speech Teacher 19 (November 1970): 310-312.

<sup>3</sup>D. P. Scannell, "Prediction of College Success from Elementary and Secondary School Performance," Journal of Educational Psychology 51 (1960): 130-134; L. H. Worthington and C. W. Grant, "Factors of Academic Success: Multivariate Analysis," Journal of Educational Research 65 (September 1971): 7-10; and P. S. Burnham and B. A. Hewitt, "Secondary School Grades and Other Data as Predictors of Academic Achievement in College," College and University 48 (Fall 1972): 21-25.

<sup>4</sup>See Lavin, pp. 47, 64; Judd and Smith, p. 13; Wayne N. Thompson, ed., Quantitative Research in Public Address and Communication (New York:

Random House, 1967), p. 187; Michael Burgoon, "The Relationship Between Willingness to Manipulate Others and Success in Two Different Types of Basic Speech Communication Courses," The Speech Teacher 20 (September 1971): 178-183; and Glenn M. Libby and Dwayne Van Rhee, "Birth Order, Machiavellianism, Sex, and Final Grade in Two Types of Basic Speech Communication Courses," paper presented at the annual meeting of the International Communication Association, New Orleans, Louisiana, April, 1974.

<sup>5</sup>Franklin Knowler, "A Study of Speech Attitudes and Adjustments," Speech Monographs 5 (1938): 130-203; Dean S. Ellis, "A University Speech Placement Test for Entering Freshmen," The Speech Teacher 15 (March 1966): 158-164; Carl Dallinger, "The Students' Speech Background and Success in the Basic Course in Speech at Northern Illinois University," paper presented to the Conference of Directors of the Basic Speech Course of the Midwestern Universities, Lawrence, Kansas, 1967; and John Thurber, "The Students' Speech Background and Success in the Basic Speech Course at Michigan State University," paper presented to the Conference of Directors of the Basic Speech Course of the Midwestern Universities, Lawrence, Kansas, 1967.

<sup>6</sup>Theodore Clevenger, Jr., "A Synthesis of Experimental Research in Stage Fright," Quarterly Journal of Speech 45 (April 1959): 134-145; Gordon L. Paul and Donald T. Shannon, "Treatment of Anxiety Through Systematic Desensitization in Therapy Groups," Journal of Abnormal and Social Psychology 71 (1966): 124-135; and James C. McCroskey and

Janis F. Andersen, "The Relationship Between Communication Apprehension and Academic Achievement Among College Students," paper presented at the annual meeting of the International Communication Association, 1976. Although the Paul-Shannon and McCroskey-Andersen studies did not deal specifically with performance in the basic speech course, the results suggested a relationship between communication apprehension and academic success as measured by overall college GPA.

<sup>7</sup> John R. Cochran, "Validated Batteries of Speaking and Listening Predictors" (Ph.D. dissertation, University of Utah, 1959); Leonard Worell, "Level of Aspiration and Academic Success," Journal of Educational Psychology 50 (April 1959): 47-54; and Dorothy J. Eason, "Predictive Variables and Scholastic Performance of Adults on a College Campus" (Ph.D. dissertation, University of North Carolina, Greensboro, 1974). While the Worell and Eason studies related generally to aspiration-performance consistency and academic success, the Cochran investigation linked the variable to public speaking ability in the basic speech communication course.

<sup>8</sup> Knower, 130-203.

<sup>9</sup> James C. McCroskey, "Measures of Communication-Bound Anxiety," Speech Monographs 37 (1970): 269-277.

<sup>10</sup> Worell, 48.

<sup>11</sup>For a discussion of the techniques used to estimate reliability, see Jum C. Nunnally, Psychometric Theory (New York: McGraw-Hill Book Company, 1967), pp. 213-214. Since the Worell questionnaire contained only five questions and yielded four predictors, the test-retest method was believed to be the best technique for estimating reliability of the instrument. Since the SPEXP and PRPSA measures contained 48 and 34 items, the split-halves and KR20 methods were reasoned to be more appropriate.

<sup>12</sup>Fred N. Kerlinger and Elazar J. Pedhazur, Multiple Regression in Behavioral Research (New York: Holt, Rinehart, and Winston, Inc., 1973).

<sup>13</sup>Jae-On Kim and Frank J. Kohout, "Multiple Regression Analysis: Subprogram Regression," in Statistical Package for the Social Sciences, 2nd ed., eds.: Norman H. Nie et. al. (New York: McGraw-Hill Book Company, 1975), pp. 345-347.

<sup>14</sup>Worell, 47-48.

<sup>15</sup>See Dallinger; and Thurber.

<sup>16</sup>Ellis, 162.

<sup>17</sup>Lavin, pp. 63-67.